

## WHAT IS CLAIMED IS:

## 1. A recording control apparatus, comprising:

a waveform rectification section for receiving a digital signal generated from an analog signal representing information reproduced from an information recording medium, and rectifying a waveform of the digital signal;

a maximum likelihood decoding section for performing maximum likelihood decoding of the digital signal having the waveform thereof rectified, and generating a binary signal representing a result of the maximum likelihood decoding;

a reliability calculation section for calculating a reliability of the result of the maximum likelihood decoding based on the digital signal having the waveform thereof rectified and the binary signal; and

an adjusting section for adjusting a shape of a recording signal for recording the information on the information recording medium based on the calculated reliability.

2. A recording control apparatus according to claim 1, wherein the adjusting section adjusts a shape of a prescribed portion of the recording signal.

3. A recording control apparatus according to claim 1, wherein the adjusting section adjusts a position of an edge of the recording signal.

4. A recording control apparatus according to claim 1, wherein the maximum likelihood decoding section performs maximum likelihood decoding using a state transition rule

which is defined by a recording symbol having a minimum polarity inversion interval of 2 and an equalization system PR (C0,C1,C0).

5. A recording control apparatus according to claim 1, wherein the maximum likelihood decoding section performs maximum likelihood decoding using a state transition rule which is defined by a recording symbol having a minimum polarity inversion interval of 2 and an equalization system PR (C0,C1,C1,C0).

6. A recording control apparatus according to claim 1, wherein the maximum likelihood decoding section performs maximum likelihood decoding using a state transition rule which is defined by a recording symbol having a minimum polarity inversion interval of 2 and an equalization system PR (C0,C1,C2,C1,C0).

7. A recording control apparatus according to claim 1, wherein the reliability calculation section calculates the reliability based on a digital signal corresponding to an end of a recording mark formed on the information recording medium and a binary signal.

8. A recording control apparatus according to claim 1, wherein the adjusting section adjusts the shape of the recording signal so as to improve the reliability.

9. A recording control apparatus according to claim 1, wherein the adjusting section calculates one of an accumulation value of the calculated reliability and an average value of the calculated reliability, and adjusts the shape of the recording signal based on one of the

accumulation value and the average value.

10. A recording control apparatus according to claim 9, wherein the adjusting section calculates one of the accumulation value of the calculated reliability and the average value of the calculated reliability for each of combinations of a recording mark length and a space length.

11. A recording and reproduction apparatus, comprising:

- a reproduction section for generating a digital signal from an analog signal representing information reproduced from an information recording medium;
- a waveform rectification section for receiving the digital signal and rectifying a waveform of the digital signal;
- a maximum likelihood decoding section for performing maximum likelihood decoding of the digital signal having the waveform thereof rectified, and generating a binary signal representing a result of the maximum likelihood decoding;
- a reliability calculation section for calculating a reliability of the result of the maximum likelihood decoding based on the digital signal having the waveform thereof rectified and the binary signal;
- an adjusting section for adjusting a shape of a recording signal for recording the information on the information recording medium based on the calculated reliability; and
- a recording section for recording the information on the information recording medium based on the adjusting result of the shape of the recording signal.

12. A recording control method, comprising the steps of:

receiving a digital signal generated from an analog signal representing information reproduced from an information recording medium, and rectifying a waveform of the digital signal;

performing maximum likelihood decoding of the digital signal having the waveform thereof rectified, and generating a binary signal representing a result of the maximum likelihood decoding;

calculating a reliability of the result of the maximum likelihood decoding based on the digital signal having the waveform thereof rectified and the binary signal; and

adjusting a shape of a recording signal for recording the information on the information recording medium based on the calculated reliability.

13. A recording control method according to claim 12, wherein the step of adjusting includes the step of adjusting a shape of a prescribed portion of the recording signal.

14. A recording control method according to claim 12, wherein the step of adjusting includes the step of adjusting a position of an edge of the recording signal.